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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER SINGH, DALZID E	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 12/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/617,204

Applicant(s)

WEDDING, BERTHOLD

Examiner

Dalzid Singh

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 4 and 8 recites, "a non-linear transmission effect occur" when the optical signal is launch in to the fiber. It appears that by launching the signal with a certain power level or modulation index it induces such non-linear effects. However, the specification does not provide the relationship between this power level with the desired effect of non-linearity nor the specification does not provide mathematical relationship of such effects. It is unclear how the relationship between power level, modulation index and non-linear effect is established. It is well known that launching of optical signal within a certain power level into the optical fiber will result in non-linear effect.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikada et al (US Patent No. 5,432,629).

Regarding claims 1, 4 and 8 (as far as understood in view of the 112 2nd paragraph), Shikada et al disclose method of transmitting a digital signal over an optical fiber link, said method comprising the steps of modulating said digital signal onto an optical carrier using frequency shift keying modulation (see col. 2, lines 37-50; col. 3, lines 51-60);

coupling said frequency modulated optical signal into an optical fiber (see Fig. 1);
demodulating the received optical signal to obtain said transmitted digital signal at the receive side end of said optical fiber (it is well known that the signal is demodulated when received at the receiving end);

wherein an optical power of said modulated optical signal launched into the optical fiber is such that a non-linear transmission effect occurs in the transmission of the modulated optical signal by the optical fiber, and said modulation index h being

defined as maximum frequency separation of said digital signal divided by the bitrate of said digital signal (see col. 1, lines 54-68 to col. 2, lines 1-12 and lines 37-50).

Shikada et al do not disclose that the frequency shift keying modulation has a modulation index $h < 1/2$. However, Shikada et al clearly suggest that the modulation index is adjustable. Based on this teaching, it would have been obvious to an artisan at the time of the invention to adjust the modulation index to be within the predetermined value such as less than $1/2$. Furthermore, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; *Minnesota Mining and Mfg. Co. v. Coe*, 69 App D.C. 217, 99 F.2d 986, 38 USPQ 213; *Allen et al. v. Coe*, 77 App D.C. 324, 135 F.2d 11, 57 USPQ 136. In addition, discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. *In re Antonie*, 559 F.2d 239, 618, 195 USPQ 6 (CCPA 1977); *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955). See also *In re Aller*, 105 USPQ 233 (CCPA 1955) and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to set the modulation index to an optimum or workable value or range by routine experimentation.

Regarding claim 2, as discussed above, it would have been obvious to set the modulation index h is in the range between $1/2$ and $1/4$.

Regarding claim 3, as discussed above, it would have been obvious to set the modulation index h is $1/3$.

Regarding claim 5, further comprising an optical dispersion compensation module (see Fig. 5).

Regarding claim 6, wherein said receiver comprising an optical filter to demodulate the optical signal (it would have been obvious to provide optical filter to reduce noise accumulated from the transmission line).

Regarding claim 9, optical transmitter according to claim 8 comprising a directly modulated laser (see col. 5, lines 63-65).

Allowable Subject Matter

5. Claim 7 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 28 September 2007 have been fully considered but they are not persuasive.

Claims 1, 4 and 8 indicates "optical power" of the modulated optical signal launched into the optical fiber "such that non-linear transmission effects occurs". The claims appear to suggests that there is a specific power level of the optical signal which will produce the "non-linear effects". However, it is unclear how much of the power is required to produce such non-linear effects. It is common in optical communication system that degradation of laser due to aging generates unwanted non-linear effects,

such as fluctuation of power levels. In this instance there is no need to adjust power level in generating the non-linear effects.

On page 2 of the remark, applicant argues that "relevant threshold can be easily determined in the field without undue experimentation." It is unclear what defines such threshold value. The example given by applicant on page 2 of the remark indicates a feedback control which result in "free of distortion" by adjusting the power level. On the contrary, the claims suggest of producing "non-linear effects" from a particular power level and does not suggest of any feedback.

On page 3 of the remark, applicant argues that Shikada does not disclose an optical power of said modulated optical signal launched into the optical fiber is such that a non-linear transmission effect occurs in the transmission of the modulated optical signal by the optical fiber. The claim is considered in view of the 112 rejection, since the claims do not provide particular value or does not establish relation between the power level and "non-linear effects" and/or the "modulation index", it has been considered as obvious that non-linear effects occur due certain power level and/or transmission fiber characteristics and/or laser characteristics.

On page 4 of the remark applicant indicates that "Applicant submits that the claimed range is critical because the claimed range achieves unexpected results relative to the prior art range." The claims indicate that the modulation index (h) is less than $\frac{1}{2}$, which also suggest that the value h could be zero. As indicated in the claims, applicant suggest plurality of ranges such as between $\frac{1}{2}$ and $\frac{1}{4}$ or at exactly at $\frac{1}{3}$. It

is unclear which of these ranges achieves unexpected result and is critical to the invention.

Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration.

Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. See MPEP § 2145 generally for case law pertinent to the consideration of applicant's rebuttal arguments.

Objective evidence which must be factually supported by an appropriate affidavit or declaration to be of probative value includes evidence of unexpected results,

commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. See, for example, *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984) ("It is well settled that unexpected results must be established by factual evidence." "[A]ppellants have not presented any experimental data showing that prior heat-shrinkable articles split. Due to the absence of tests comparing appellant's heat shrinkable articles with those of the closest prior art, we conclude that appellant's assertions of unexpected results constitute mere argument."). See also *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *Ex parte George*, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 20, 2007

DALZID SINGH
PRIMARY EXAMINER
Dalzid Singh